Patent claims

1. A method for operating an illuminating system having a high-pressure discharge lamp operated by alternating current (I_L), and having a color filter system that filters light from the lamp sequentially in time with the aid of a plurality of color filters (G, W, B, R),
in the case of which method the alternating current supply (I_L) of the lamp is commutated (7, 10, 13) at least three times within a complete sequence of color filterings (G, W, B, R).

2. The method as claimed in claim 1, in which consecutive spacings (5, 6; 8, 9; 11, 12) between commutations (7, 10, 13) of the lamp current (I_L) differ from one another.

3. The method as claimed in claim 1 or 2, in which within spacings (5, 6; 8, 9; 11, 12) between commutations (7, 10, 13) there is a substantially temporally constant lamp current (I_L) over a large part (5, 8, 11) of the spacing, there occurring, preferably at the end of the spacing, a phase (6, 9, 12) that is shorter by comparison with the spacing and has a lamp current (I_L) increased by contrast therewith.

4. The method as claimed in claim 3, in which a white phase (W) without color filtering is included in the sequential sequence of the color filterings (G, W, B, R), and a phase of the overincreased lamp current (6) lies at least partially in this white phase (W) free of color filtering.

5. The method as claimed in claim 3 or 4, in which there are respectively provided between the individual color filter phases (G, W, B, R) in the sequential sequence interphases that cover the time period in which the light from the lamp is simultaneously

filtered by two of the color filters (G, W, B, R), and in which the phases (6, 9, 12) with an overincreased lamp current (I_L) lie at least partially in these interphases.

6. The method as claimed in one of claims 3-5, in which the phases (6, 9, 12) with an overincreased lamp current (I_L) lie directly before each lamp current commutation (7, 10, 13).

7. The method as claimed in claim 6, in which four color filter phases (G, W, B, R) including the white phase are provided in the temporal sequence of color filterings, and one phase (6) of the overincreased lamp current (I_L) lies in an interphase before the white phase (W) and at the start of the white phase (W), and a phase (9, 12) of overincreased lamp current (I_L) is provided in respectively two further interphases.

8. The method as claimed in one of the preceding claims, in which the lamp current (I_L) is periodic in time, and each period has two half periods (5-13) which are symmetrical and of inverted sign and respectively correspond to at least three commutations (7, 10, 13) of the lamp current (I_L).

9. The method as claimed in claim 8, in which a half period (5-13) of the lamp current (I_L) corresponds to a period (P) of the sequential color filtering (G, W, B, R).

10. The method as claimed in one of the preceding claims, at least claim 3, in which the length of the phase (6, 9, 12) of overincreased lamp current (I_L) and/or the overincrease of the lamp current (I_L) in this phase are/is varied for the purpose of electrode shaping and/or stabilizing the lamp operation.

11. The method as claimed in claims 4 and 10, in which

only the length of the phases (6) of overincreased lamp current (I_L), and specifically only that of the phase (6) of overincreased lamp current lying before and at the start of the white phase (W) is varied.

12. The method as claimed in one of the preceding claims, in which the mean frequency of the commutation (7, 10, 13) of the lamp current (I_L) is at least 180 Hz.

13. The method as claimed in one of the preceding claims, in which the lamp current (I_L) is generated by an electronic ballast that is tuned via a digital control signal (SCI) to the sequential sequence of the color filterings (G, W, B, R), in which control signal (SCI) a pulse edge determines the temporal position of a phase (6, 9, 12) of overincreased lamp current (I_L), and a pulse length determines the temporal length of a phase (6, 9, 12) of overincreased lamp current (I_L).

14. An electronic ballast that is designed for a method as claimed in one of claims 1-13.

15. An illuminating system having a discharge lamp operated by alternating current, a color filter system and an electronic ballast as claimed in claim 14, which illuminating system is designed for a method as claimed in one of claims 1-13.

16. Back projection visual display unit having an illuminating system as claimed in claim 15.

17. Beamer having an illuminating system as claimed in claim 15.